

# PERMIT BOOK

STATE OF MISSOURI



## DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

### PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **092010-007** Project Number: 2010-06-064

Parent Company: Independent Stave Co.

Parent Company Address: 1078 S. Jefferson St., Lebanon, MO 65536

Installation Name: Independent Stave Co.

Installation Number: 105-0001

Installation Address: 1078 S. Jefferson St., Lebanon, MO 65536

Location Information: Laclede County, S34, T12, R16W

Application for Authority to Construct was made for:

A green sawdust bagging process for a marketable product and a sawdust conveyance process for on-site boiler fuel. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

SEP 20 2010

EFFECTIVE DATE

  
\_\_\_\_\_  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

**You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review.** In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

Page No.	3
Permit No.	
Project No.	2010-06-064

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Independent Stave Co.  
Laclede County, S34, T12, R16W

1. Emission Limitation
  - A. Independent Stave Co. shall emit less than 15.0 tons of particulate matter less than ten (10) microns in diameter (PM<sub>10</sub>) in any consecutive 12-month period from the sawdust bagging process and sawdust conveyance for Heine boiler fuel, EU-57 and EU-58 respectively.
  - B. Electronic forms, which have been approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
  
2. Emission Limitation
  - A. Independent Stave Co. shall emit less than 10.0 tons individually and 25.0 tons combined of Hazardous Air Pollutants (HAPs) in any consecutive 12-month period from the entire installation (Table 1).

**Table 1: Installation HAP Emission Sources**

Designation	Description
EU-0026	Heine boiler
EU-0027	Cleaver Brooks boiler
EU-0019	Wine head toasters
EU-0020	Bourbon head char
EU-0021	Wine barrel toaster
EU-0022	Bourbon barrel char
EU-0023	Barrel pre heater
EU-0024	Drum heater
EP-36	Wine barrel laser
EU-0028	Stave toaster wood burner
EU-0025	Electric tank stave toaster
EU-0022	Natural gas fired bourbon barrel char
EU-0024	Natural gas fired drum heater
EU-0029	Alternative tank stave oven natural gas burner
EU-0001	Natural gas fired chip roasters (4)
EU-0030	Used oil burner
EP-55	Building #4 paint booth
EP-56	Truck shop parts cleaner
EP-57	Building #2 parts cleaner

Page No.	4
Permit No.	
Project No.	2010-06-064

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- B. Electronic forms, which have been approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.B.
  
- 3. Control Device Requirement  
Independent Stave Co. shall control emissions from conveyors/augers in EU-58 by using complete enclosure and negative pressure. Negative pressure shall be indicated by the operation of a blower which transfers material into the Heine boiler fuel silo (EU-0005).
  
- 4. Record Keeping and Reporting Requirements
  - A. Independent Stave Co. shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used.
  
  - B. Independent Stave Co. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2010-06-064  
Installation ID Number: 105-0001  
Permit Number:

Independent Stave Co.  
1078 S. Jefferson St.  
Lebanon, MO 65536

Complete: June 21, 2010

Parent Company:  
Independent Stave Co.  
1078 S. Jefferson St.  
Lebanon, MO 65536

Laclede County, S34, T12, R16W

REVIEW SUMMARY

- Independent Stave Co. has applied for authority to construct a green sawdust bagging process for a marketable product and a sawdust conveyance process for on-site boiler fuel.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Enclosure with negative pressure is being used to control the PM<sub>10</sub> emissions from the sawdust as boiler fuel conveyance equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM<sub>10</sub> are conditioned below de minimis levels.
- This installation is located in Laclede County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- An amendment to the Intermediate Operating Permit is required for this installation within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

Independent Stave Co., Inc (Independent Stave) manufactures oak barrels and oak flavoring products for the alcoholic beverage industry. Independent Stave is located in Lebanon, Missouri, and is a minor source under construction permits, and an intermediate source under operating permits.

The following permits have been issued to Independent Stave Co. from the Air Pollution Control Program.

**Table 2: Permit History**

Permit Number	Description
0995-014	Installation of a wood/bark waste fired boiler for wine barrel toasting
072001-008	Installation of a bucket loader, a metering bin and a hammermill
0995-014A	Electric barrel toasting elements instead of burning wood scraps
OP2002-06-002	Intermediate operating permit
092002-024	Sawdust loading
082006-007	New barrel types
OP2010-010	Intermediate operating permit renewal
052009-005	New screen and conveyors
OP2009-07-039	Amend intermediate operating permit
022010-004	Surface coating booth

## PROJECT DESCRIPTION

Independent Stave is proposing to install a green sawdust bagging process for a marketable product and a sawdust conveyance process for on-site boiler fuel. The sawdust bagging process is designated as EU-57, which consists of offsite generated green oak sawdust being dumped onsite then moved by a front-end loader to a metering bin that feeds a Sweco XS48C88 vibratory screen. The screen separates off-spec sawdust from a marketable product. Off-spec sawdust is routed to a dumpster. Acceptable sawdust is openly conveyed to a ESP GBAO-31 bagger. The bottlenecked maximum hourly design rate (MHDR) of the screen is two tons per hour. According to Independent Stave, rates exceeding this value produce diminishing returns. Of the two tons fed to the screen each hour, 0.28 tons are off-spec.

The sawdust conveyance process for on-site boiler fuel is designated as EU-58. It consists of enclosed pneumatic ducts and augers under negative pressure that transfer wood waste from the existing Cleaver Brooks boiler fuel silo (EP-17) to the existing Heine boiler. Negative pressure is developed from a blower that fills the Heine boiler. The system will also accept wood waste, from the existing green storage building, which will be moved by front-end loader to a metering bin that feeds Heine boiler. The MHDR of this process was determined using the MHDR of the Heine boiler, 25.87 million British thermal units per hour (MMBtu/hr). Conservatively assuming all boiler fuel will pass through EU-58, and a white oak heating value of 27 MMBtu/cord, with a cord weight of 3,863 pounds at 20% moisture yields an MHDR of 1.85 tons of wood per hour. According to Independent Stave, this fuel system will not de-bottleneck the MHDR of the Heine boiler.

### EMISSIONS/CONTROLS EVALUATION

The emission factor applied to each step is 0.36 pounds of PM<sub>10</sub> per ton of sawdust handled, SCC 3-07-008-03. This emission factor has been revoked, but remains the best match for the process, short of stack testing. Enclosed conveyors under negative pressure were assigned 100 percent capture and control efficiencies, and therefore do not contribute to the project emissions.

Existing Potential Emissions of the Installation are the sum of permit 082006-007 and individual project emissions until this permit. Potential emissions of the project represent the potential of the new equipment, assuming continuous operation (8,760 hours per year). Conditioned Potential Emissions of the Project represent the voluntary project PM<sub>10</sub> limitation of less than 15.0 tons per year. Potential Emissions of the Installation represent limits on CO and HAPs to less than major source levels. The following table provides an emissions summary for this project.

**Table 3: Emissions Summary (tons per year)**

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions of the Installation	Potential Emissions of the Project	Conditioned Potential Emissions of the Project	Potential Emissions of the Installation
PM <sub>10</sub>	15.0	138.92	24.76	<15.0	153.92
SO <sub>x</sub>	40.0	1.99	N/A	N/A	1.99
NO <sub>x</sub>	40.0	77.32	N/A	N/A	77.32
VOC	40.0	114.71	N/A	N/A	114.71
CO	100.0	<250.0	N/A	N/A	<250.0
HAPs	10.0/25.0	34.93	N/A	N/A	<10.0/25.0

N/A = Not Applicable; N/D = Not Determined

Compliance with the project PM<sub>10</sub> emission limit and installation-wide HAP limit will be verified using electronic documents generated by Independent Stave that have been approved by the Air Pollution Control Program.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM<sub>10</sub> are conditioned below de minimis levels.

## APPLICABLE REQUIREMENTS

Independent Stave Co. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

### SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

---

David Little  
Environmental Engineer

---

Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 14, 2010, received June 21, 2010, designating Independent Stave Co. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southwest Regional Office Site Survey, dated July 21, 2010.